#### Lecture Module - Electrical Instruments

ME3023 - Measurements in Mechanical Systems

Mechanical Engineering
Tennessee Technological University

**Topic 2 - Prototype Circuits** 

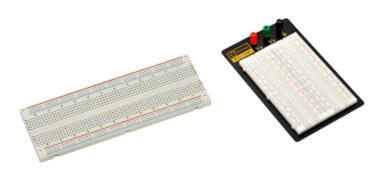


#### Topic 2 - Prototype Circuits

- Circuits for Mechanical Engineers
- Using a Solderless Breadboard
- Using a Desktop Power Supply
- Examples

#### Circuits for Mechanical Engineers

Engineering is an integrated field...



```
4 5 ...
```

Question: Why is the breadboard separated into sections? (note: this image shows 4 - top,bottom,top,bottom)

| Pros: | <u>Cons:</u> |
|-------|--------------|
|-------|--------------|

Common Mistakes:

# Using a Desktop Power Supply





## Using a Desktop Power Supply



## Using a Desktop Power Supply

- Saftey
- Damage
- Control

#### Examples

| +0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0       | 0          |
|--|------------|
| 1 2 3 4 5<br>A                         | 0-0-0-0    |
| FQ Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q | 0-0-0-0    |
| +0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0       | <b>-</b> ○ |

#### Examples

| +0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0       | 0          |
|--|------------|
| 1 2 3 4 5<br>A                         | 0-0-0-0    |
| FQ Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q | 0-0-0-0    |
| +0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0       | <b>-</b> ○ |